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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,639	09/30/2003	Alisdair J. Brown	2002M012	4694

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EXAMINER
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THEXTON, MATTHEW

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 09/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/674,639

Applicant(s)

BROWN ET AL.

Examiner

Matthew A. Thexton

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 16,17 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15,18 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-20 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of Group 1 and the species (a) zinc salt of reaction product of phosphorus sulfide and a mixture of 4-methyl-2-pentanol and dipropylene glycol and (b) molybdenum di-coco-dithiocarbamate in the reply filed on 2006 March 3 is acknowledged.

Claims 16, 17, and 20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 2006 March 3.

The elected combination of species is **allowable**.

Other species have been examined and searched. Rejections appear hereinbelow.

### ***Claims Version***

The listing of claims filed 2006 July 17 has been examined.

### ***Claims Analysis***

Claims 16, 17, and 20 are withdrawn.

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Claim 1 is directed to lubricant mixtures comprising:

(A) an oil-soluble or –dispersible salt of a dihydrocarbylthiophosphoric acid

derived from the reaction of:

(I) at least one compound (P) having at least two groups

independently selected from hydroxyl and sulfhydryl,

wherein there is (sic) at least four atoms separating the two

groups, or

(II) at least one compound (P) as defined in (I) and at least one

compound (M) which is different from (P) and has at least one

group selected from hydroxyl and sulfhydryl, with

phosphorus sulfide;

(B) an oil-soluble or –dispersible molybdenum compound; and

(C) a major amount of an oil of lubricating viscosity.

Claims 2-12 and 14 depend directly or indirectly from claim 1 and specify or further limit: the scope of (II); the proportion of (II) relative to (I); the scope of (I); the scope of the salt moiety; the scope of (B); the amount of phosphorus in the mixture; methods of making comprising “blending” (A) and (B).

Independent claim 13 is directed to an additive concentrate comprising a diluent fluid and (A) and (B), as set forth in claim 1.

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Independent claim 15 is directed to methods of lubricating a surface comprising "supplying" to the surface the lubricant composition as defined in claim 1.

Claim 18 depends from claim 17, which depends from independent claim 16 which is directed to salts or salt mixtures as in (A) of claim 1 but where (P) further has at least one atom in the separating group selected from oxygen, sulfur, and nitrogen; and wherein claim 18 further comprises a diluent fluid and one or more co-additives. Diluent fluid is interpreted to encompass oil of a lubricating viscosity.

Claim 19 depends from claim 17 and further comprises a major amount of an oil of lubricating viscosity.

### ***Claim Rejections***

Claims 1-15, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colclough (EP 322235A2) in view of McConnachie et al. (WO 99/31113A1).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

The reference '235 discloses metal dithiophosphates which dithiophosphates are prepared by reacting phosphorus pentasulfide with a mixture of alcohols in which one is aliphatic mono-ol and the other may be an ether diol (page 2, lines 32-55) or a polyalkylene oxide derivative of an alcohol (page 4, line 61 to page 5, line 5). It is suggested to employ more of the mono alcohol derivative than the other and to employ

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a diluent as needed (page 3, lines 57-8, and page 8 line 63 to page 9, line 1) or to combine with additives to make concentrates or packages (page 10, line 61 to page 11, line 11), per present claims 3 and 13. The additive mixture is useful in lubricants as an anti-oxidant (page 3, lines 54-5). The ether meets the limitation of claim 7.

Combinations with other lubricant additives such as friction modifiers, anti-wear agents is suggested (page 9, lines 35-40). The intended use discussed throughout and the tests disclosed clearly show the intent to provide methods of lubricating, per present claim 15.

'113 discloses oil-soluble or –dispersible trinuclear molybdenum-sulfur compounds, example 1 corresponding to Applicant's specie for oils 7 and 8 in the present specification (page 24), and which provide anti-friction, anti-wear, anti-oxidant, reduction of fuel consumption benefits to lubricants (page 2, last paragraph, page 3, first paragraph). Combinations with lubricants and other lubricant additives such as anti-oxidants is suggested (page 6, lines 22-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine these additives in '235 and '113 in view of the mutual suggestions to do, thus arriving at embodiments encompassed by Applicant's claims.

Claims 1-15, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colclough (EP 322235A2) in view of Leta et al. (US 6358894B1).

The present claims are broadly discussed hereinabove in the section **Claims Analysis** which is incorporated by reference.

The reference '235 discloses metal dithiophosphates which dithiophosphates are prepared by reacting phosphorus pentasulfide with a mixture of alcohols in which one is aliphatic mono-ol and the other may be an ether diol (page 2, lines 32-55) or a polyalkylene oxide derivative of an alcohol (page 4, line 61 to page 5, line 5). It is suggested to employ more of the mono alcohol derivative than the other and to employ a diluent as needed (page 3, lines 57-8, and page 8 line 63 to page 9, line 1) or to combine with additives to make concentrates or packages (page 10, line 61 to page 11, line 11), per present claims 3 and 13. The additive mixture is useful in lubricants as an anti-oxidant (page 3, lines 54-5). The ether meets the limitation of claim 7. Combinations with other lubricant additives such as friction modifiers, anti-wear agents is suggested (page 9, lines 35-40). The intended use discussed throughout and the tests disclosed clearly show the intent to provide methods of lubricating, per present claim 15.

'894 discloses oil-soluble or -dispersible trinuclear molybdenum-sulfur compounds, example 1 corresponding to Applicant's specie for oils 7 and 8 in the present specification (page 24), and which provide anti-friction, anti-wear, anti-oxidant, reduction of fuel consumption benefits to lubricants (examples). Combinations with lubricants and other lubricant additives such as anti-oxidants is suggested (column 5, lines 3-4 examples ).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine these additives in '235 and '894 in view of the mutual suggestions to do, thus arriving at embodiments encompassed by Applicant's claims.

Claims 1-15, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colclough (EP 322235A2) in view of Waddoups et al. (US 6074993A).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

The reference '235 discloses metal dithiophosphates which dithiophosphates are prepared by reacting phosphorus pentasulfide with a mixture of alcohols in which one is aliphatic mono-ol and the other may be an ether diol (page 2, lines 32-55) or a polyalkylene oxide derivative of an alcohol (page 4, line 61 to page 5, line 5). It is suggested to employ more of the mono alcohol derivative than the other and to employ a diluent as needed (page 3, lines 57-8, and page 8 line 63 to page 9, line 1) or to combine with additives to make concentrates or packages (page 10, line 61 to page 11, line 11), per present claims 3 and 13. The additive mixture is useful in lubricants as an anti-oxidant (page 3, lines 54-5). The ether meets the limitation of claim 7. Combinations with other lubricant additives such as friction modifiers, anti-wear agents is suggested (page 9, lines 35-40). The intended use discussed throughout and the tests disclosed clearly show the intent to provide methods of lubricating, per present claim 15.

'993 discloses lubricating mixtures comprising oil-soluble or -dispersible trinuclear molybdenum-sulfur compounds and zinc dihydrocarbyldithiophosphate compounds.



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It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the blend of zinc dihydrocarbyldithiophosphate compounds disclosed in '235 into the mixtures of '993 in order to obtain the benefits attributed to the '235 blend, thus arriving at embodiments encompassed by Applicant's claims.

### ***Response to Arguments***

Applicant's arguments filed 2006 July 17 have been fully considered but they are not fully persuasive.

Applicant asserts (page 6, fourth paragraph) that claims 3 and 4 are of different scope and therefore potential double patenting does not exist. The Examiner concurs.

Applicant notes (page 6, last paragraph) that claim 15 was not rejected over prior art. This was inadvertent; the rejections have been rewritten to include claim 15.

Applicant argues (paragraphs bridging pages 7-8) the prima facie case is rebutted by the comparative data of the specification (discussed at page 7, first paragraph). This is responded to as follows. The claims are not commensurate in scope with the evidence presented in the specification. Hence, Applicant is arguing limitations not set forth in the claims. The elected species (ZDDP 2 with molybdenum di-coco-dithiocarbamate) has been indicated as allowable.

### ***Conclusion***

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In view of the error in not including claim 15 in the rejections set forth in the previous Office action, this action is NON-FINAL. In addition, another rejection has been set forth because it provides a prima facie case based on different rationale.

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew A. Thexton whose telephone number is 571-272-1125. The examiner can normally be reached on Tuesday-Friday, 9:30 to 7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan S. Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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